

PUBLIC WATER FORUM MINUTES

SERIES 3

February 4, 2010

The City Council of the City of Norman, Cleveland County, State of Oklahoma, attended a Public Water Forum at 6:00 p.m. in the Municipal Building Council Chambers on the 4th day of February, 2010, and notice of the forum was posted at the Municipal Building at 201 West Gray 48 hours prior to the beginning of the meeting. The City of Norman is hosting a Public Forum Series on sustainable water resources for our future to explore long term solutions for Norman's drinking water needs. The public forums are open to everyone with an interest in water and Norman's future. Although this forum is not a regularly scheduled meeting of Council a quorum of Council was present; therefore, a summary of the forum is recorded as required by the Open Meeting Act.

PRESENT:

Councilmembers Atkins, Butler, Dillingham, Griffith, Quinn, Mayor Rosenthal

ABSENT:

Councilmembers Cubberley, Ezzell and Kovach

OTHER WATER SUPPLY OPTIONS (RECLAIMED WATER, BRACKISH WATER, AND ARSENIC TREATMENT TECHNOLOGIES)

Mr. Ken Komiske, Director of Utilities, welcomed guests and said the discussion this evening will focus on other water supply options. He said the City is committed to looking at as many available alternatives as possible to meet the City's water supply needs and the discussion will include three presentations. Mr. John Harrington, Director of Water Resources for the Association of Central Oklahoma Governments (ACOG), provided an overview of groundwater in Central Oklahoma; Mr. Michael Graves, P.E., Garver Engineers, provided the results of the City's Arsenic Removal Demonstration Project; and Ms. Tracy Clinton, P.E., Carollo Engineers, discussed the option of using reclaimed water.

Mr. Harrington outlined the definition of groundwater, the basic geology in central Oklahoma, and issues with water quality and water quantity. He provided an overview of the hydrologic cycle of water and how that applies to the aquifer, specifically the Garber Wellington. He described bedrock and alluvial aquifers; the types of groundwater systems; how droughts affect the aquifer; and brackish water in the aquifer.

Items submitted for the record

1. PowerPoint presentation entitled, "Groundwater in Central Oklahoma," presented by John M. Harrington, Director, Water Resources, ACOG

Mr. Graves presented the objectives, details, results, and conclusions of a one year arsenic removal demonstration project at Water Well No. 31. The project was an adsorption process whereby the arsenic is absorbed into a dry crystalline granular media. The media is non-hazardous material and can be disposed of in the landfill. He described it as a widely used and accepted process permitted and operating in 21 different states, but is the first one done in Oklahoma. Garver Engineers worked closely with the Department of Environmental Quality to receive the proper permits required for the project. The project was successful in removing the arsenic and placing 73.6 million gallons of water back into the potable water supply, which once sold generated \$155,000 in revenue for the City. Since the demonstration and testing phase has been completed, the cost for future projects would be approximately \$1.11 per thousand gallons to treat and restore arsenic water to the potable water system.

Items submitted for the record

1. PowerPoint presentation entitled, "Other Water Supply Options, Garber Wellington Arsenic Removal, City of Norman Sustainable Water Resource Forum" dated February 4, 2010, presented by Michael Graves, P.E., Garver Engineers

Ms. Clinton presented the use of reclaimed water and said the first regulations for reclaimed water were adopted in 1918 in California. She said historically water reuse is used for a variety of reasons, i.e., irrigation, power plants, concrete mixing, carpet dyeing, animal habitats, paper board manufacturing, high tech chip manufacturing, commercial/industrial, recharge, and indirect potable use. The first deliberate recharge of reclaimed water into potable groundwater supply took place in 1962 in the Los Angeles area. She provided an overview of case studies from Orange County California Water District, El Paso Water Utilities, and a land application system and wetlands in Clayton County Georgia. She said there are technical, financial, institutional, and legislative considerations for reclaimed water implementation and briefly discussed each area.

Items submitted for the record

1. PowerPoint presentation entitled, "Other Water Supply Options, Reclaimed Water, City of Norman Sustainable Water Resource Forum" dated February 4, 2010, presented by Tracy A. Clinton, P.E., Carollo Engineers

COMPILATION OF QUESTIONS RECEIVED DURING THE FORUM.	
Those not answered during the session will be addressed at a subsequent session prior to completion of the forum series.	
1.	<i>Does the \$1.11 per thousand gallons cost include the capital, i.e., equipment, pipes, etc.?</i>
2.	<i>What is the cost of the reclaimed water solution?</i>
3.	<i>What is the degradation rate for the ferric oxide treatment? What is the leach potential? How long has the product been out?</i>
4.	<i>Has Norman, specifically, been studied for reclaimed water potential? If reclaimed water is selected, how long of a solution will it provide; 10 years, 50 years?</i>
5.	<i>Does the City have a plan for reuse on an individual basis, i.e., use of gray water?</i>
6.	<i>Do we need a source to displace salt?</i>
7.	<i>The City needs to report to citizens the cost of each potential solution.</i>
8.	<i>Could the City reclaim part of the effluent OU uses to irrigate their golf course if the City chose to use reclaimed water?</i>
9.	<i>Concern expressed whether effluent can be treated to potable water levels. Is it true there are reports of high levels of pharmaceuticals and hormones that remain in the effluent once treated?</i>
10.	<i>How does other state's treatment of effluent compare to our proposed treatment of effluent?</i>
11.	<i>What does the state allow for recharge?</i>
12.	<i>What is the upfront cost of infrastructure for reuse? What is dual plumb?</i>
13.	<i>In the arsenic demonstration project, did the water go through the first, second, or third vessel?</i>
14.	<i>When did the arsenic rule go into effect?</i>
15.	<i>Could reuse not provide substantial water for Norman?</i>
16.	<i>If all 14 of the City's arsenic wells were treated, how much water could be gained?</i>
17.	<i>How are mercury and heavy metals extracted from the water, i.e., mercury in Lake Sardis?</i>

The meeting adjourned at 8:08 p.m.

ATTEST:

City Clerk

Mayor